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(54) **SITE-SPECIFIC CELL PERFORATION
TECHNIQUE**

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ABSTRACT

A technique for controlling membrane denaturation reac-
tions other than physical shear force was developed. For
example, the present invention provides, a method for
causing membrane disruption at a specific site by reacting a
stimulus such as light with a compound that is activated by
the stimulus, where the reaction occurs on a membrane such
as a biomembrane. It also provides a membrane structure
such as cells in which a specific site has been disrupted,
which are obtained by the present method. Introduction of
substances such as genes also became possible by using this
membrane structure. Further provided is a membrane-
destroying member for disrupting a membrane at a specific
site. Thus, the present invention enabled, for example, easy
membrane penetration using components constituting
microelectrodes, micromanipulators, and microinjectors,
which were conventionally hardly usable in penetrating cell
membranes.

2 Claims, 13 Drawing Sheets

